

FIG. 1

ROOT DIRECTORY 1450

SUB DIRECTORY 1451

REWRITABLE TITLE SET RW_VTS 1452
(DVD_RTR DIRECTORY)

RTR=REAL TIME RECORDING

DATA FILES 1453

CONTROL INFORMATION 1011
=RW_VIDEO_CONTROL.IFO (RTR.IFO)

BACKUP OF CONTROL INFO.
=RW_VIDEO_CONTROL.BUP

AV FILE 1401 (RTR DATA)
=RW_OBJECT.OB

VIDEO OBJECT (RTR_MOV.VRO) 1012

PICTURE OBJECT (RTR_STO.VRO) 1013

AUDIO OBJECT (RTR_STA.VRO) 1014

THUMBNAIL OBJECT 1016

REWRITABLE ADDITIONAL INFO. 1454
=RW_ADD.DAT

SUB DIRECTORY 1451

VIDEO TITLE SET VIDEO_TS (OR VTS) 1455

AUDIO TITLE SET AUDIO_TS (OR ATS) 1456

SUB DIRECTORY FOR COMPUTER DATA STORAGE 1457

FIG. 2

2007-02-16 10:29:40

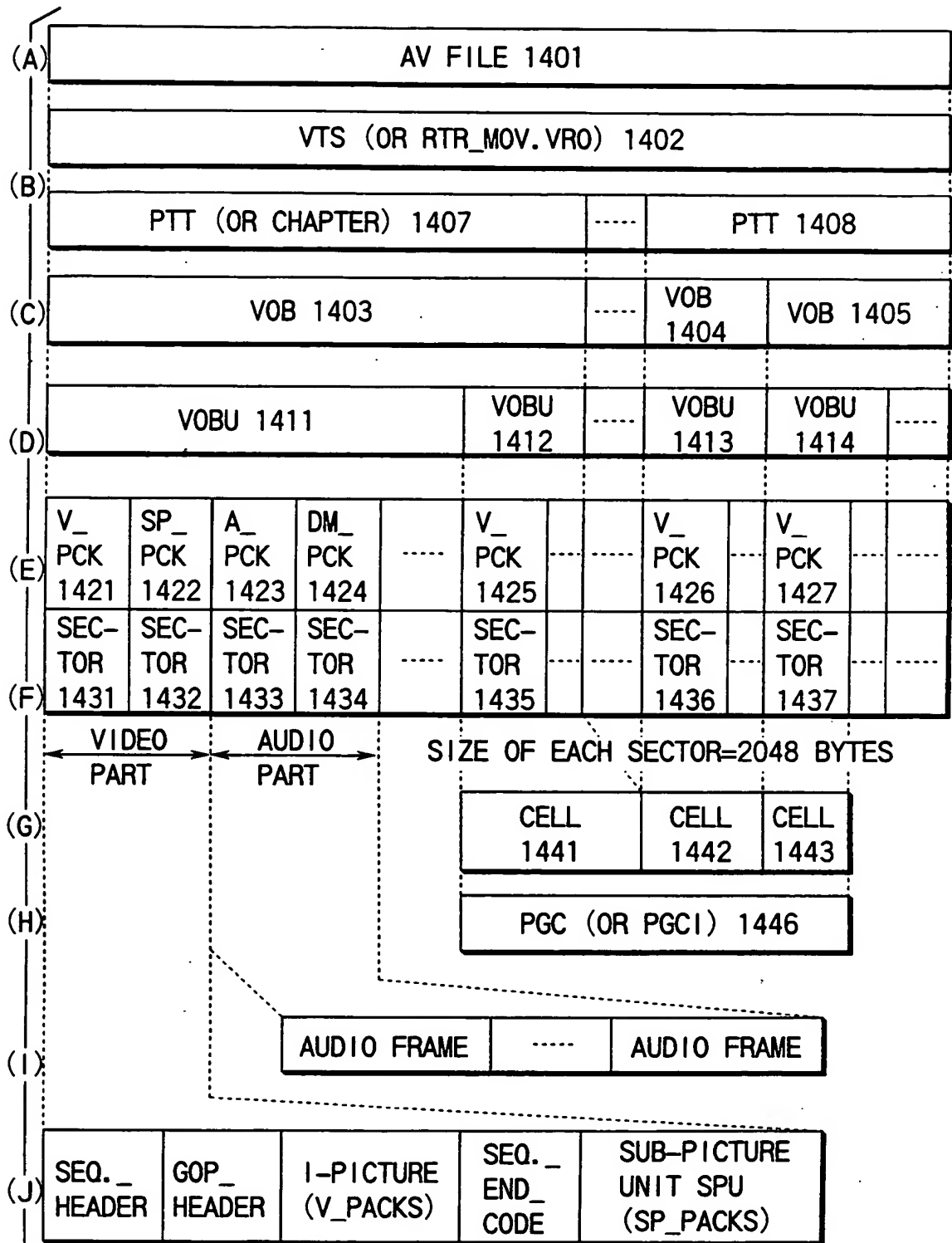


FIG. 3

←SMALLER LOGICAL SECTOR NUMBER (LSN)
←INNER SIDE OF OPTICAL DISC 1001

FIG. 4

CONTENTS OF
 ALLOCATION
 MAP TABLE
 1105

DISTRIBUTION
 INFORMATION OF
 POSITIONS OF
 UNRECORDED
 AREA 1621

DISTRIBUTION
 INFORMATION OF
 POSITIONS OF
 RECORDED DATA
 AS TO VOB #1
 1622

DISTRIBUTION
 INFORMATION OF
 POSITIONS OF
 RECORDED DATA
 AS TO VOB #2
 1623

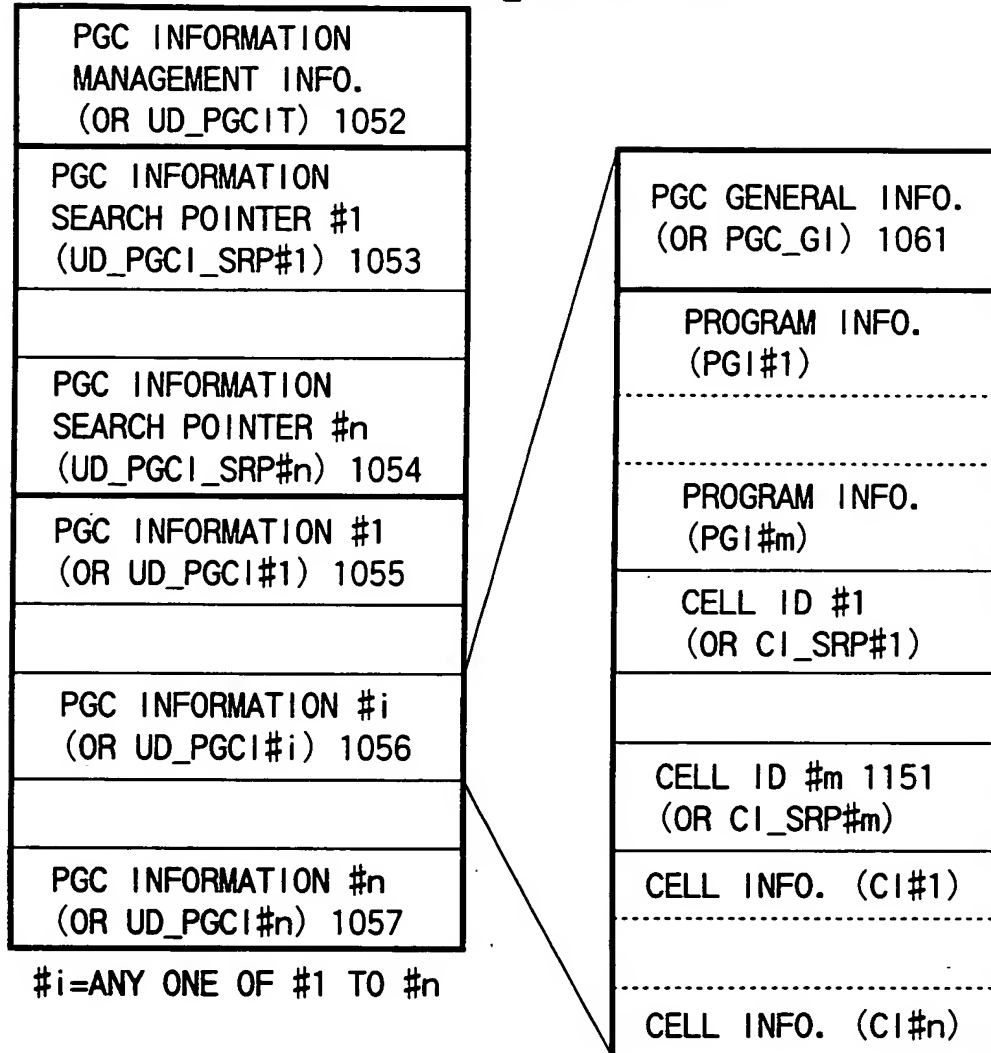
DISTRIBUTION
 INFORMATION OF
 POSITIONS OF
 RECORDED DATA
 AS TO VOB #3
 1624

NUMBER OF EXTENTS IN UNRECORDED AREA 1601	1
1ST ADR. (LSN) OF 1ST EXTENT IN UNRECORDED AREA 1606	e-a
SIZE (SECTORS) OF 1ST EXTENT IN UNRECORDED AREA 1614	f-e
NUMBER OF EXTENTS IN VOB #1 1602	1
1ST ADR. (LSN) OF 1ST EXTENT IN VOB #1 1607	b-a
SIZE (SECTORS) OF 1ST EXTENT IN VOB #1 1615	c-b
NUMBER OF EXTENTS IN VOB #2 1603	1
1ST ADR. (LSN) OF 1ST EXTENT IN VOB #2 1608	d-a
SIZE (SECTORS) OF 1ST EXTENT IN VOB #2 1616	e-d
NUMBER OF EXTENTS IN VOB #3 1604	3
1ST ADR. (LSN) OF 1ST EXTENT IN VOB #3 1609	1
SIZE (SECTORS) OF 1ST EXTENT IN VOB #3 1617	b-a
1ST ADR. (LSN) OF 2ND EXTENT IN VOB #3 1610	c-a
SIZE (SECTORS) OF 2ND EXTENT IN VOB #3 1618	d-c
1ST ADR. (LSN) OF 3RD EXTENT IN VOB #3 1611	f-a
SIZE (SECTORS) OF 3RD EXTENT IN VOB #3 1619	g-f

FIG. 5

10075284-024002

PGC CONTROL INFO. (OR UD_PGCIT) 1103



- *1> PGC INFORMATION (OR UD_PGCI) CAN DEFINE
A GROUP OF ONE OR MORE PROGRAMS;
- *2> EACH PROGRAM CAN BE FORMED OF ONE OR MORE CELLS;
- *3> EACH CELL CAN BE SPECIFIED BY CELL ID (OR CI_SRP);
- *4> EACH CELL ID (OR CI_SRP) CAN INDICATE POSITION
(OR START ADDRESS) OF CELL INFORMATION (OR CI);
- *5> EACH CELL INFORMATION (OR CI) CAN DETERMINE
START TIME AND END TIME OF PRESENTATION OF CELL

FIG. 6

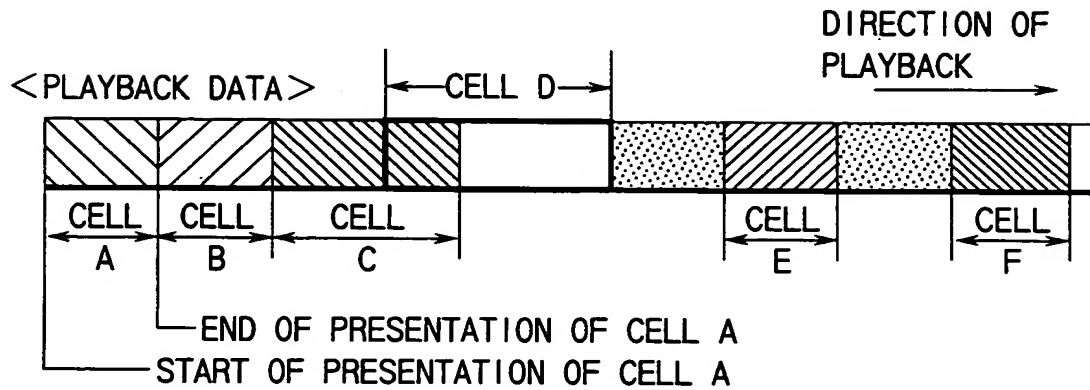


FIG. 7A

PGC INFORMATION (PGCI)

PGC#1 1081		PGC#2 1082		PGC#3 1083	
NUMBER OF CELLS=3		NUMBER OF CELLS=3		NUMBER OF CELLS=5	
#1	CELL A	#1	CELL D	#1	CELL E
#2	CELL B	#2	CELL E	#2	CELL A
#3	CELL C	#3	CELL F	#3	CELL D
—	—	—	—	#4	CELL B
—	—	—	—	#5	CELL E
CELL ID	CELL INFO.	CELL ID	CELL INFO.	CELL ID	CELL INFO.
CI_SRP #m=3	CI #n=3	CI_SRP #m=3	CI #n=3	CI_SRP #m = 5	CI #n=4

FIG. 7B

20060403 10060403

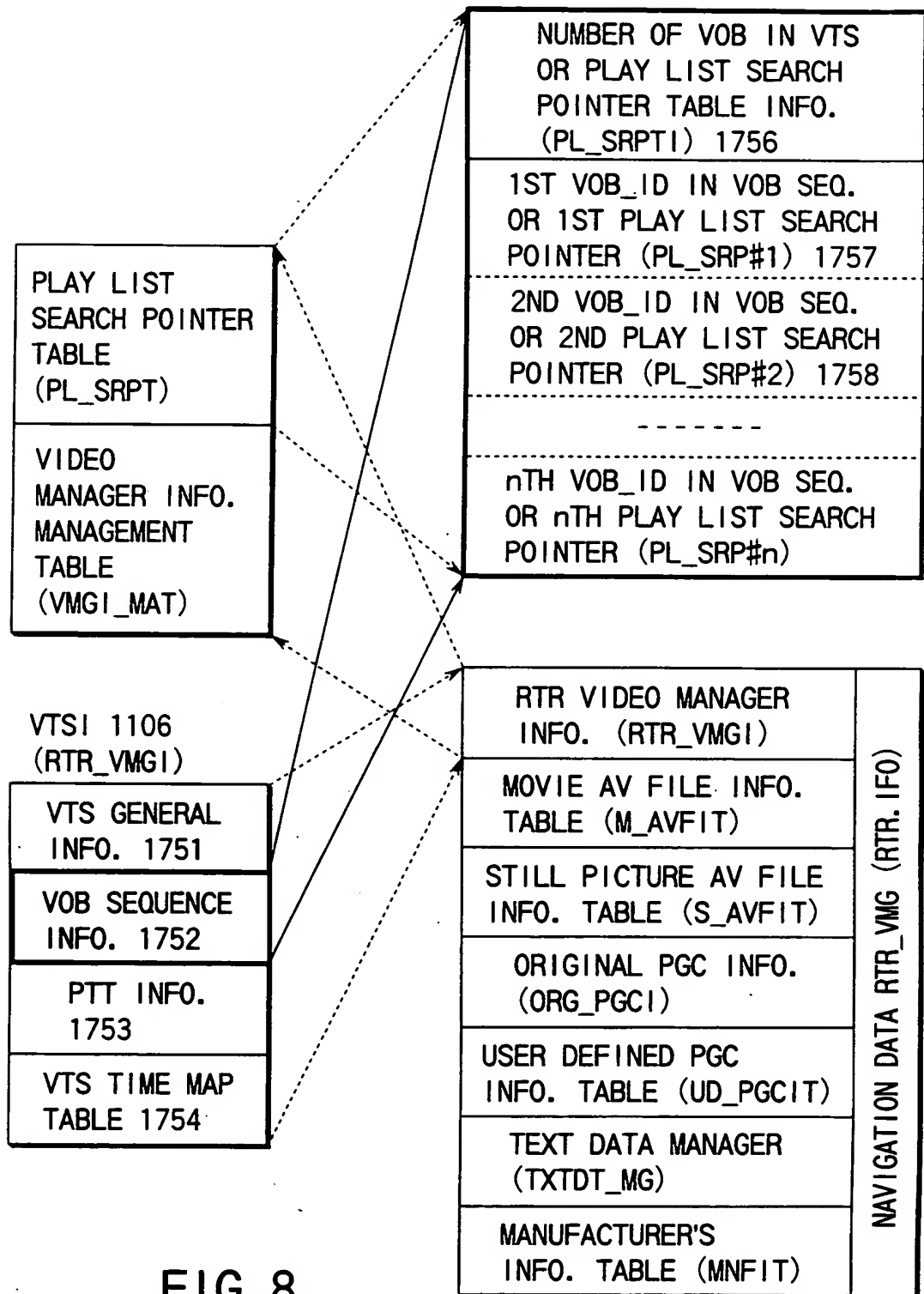


FIG. 8

FIG. 9A

AV FILE 1401

FIG. 9B

VTS (OR RTR_MOV.VRO) 1402

FIG. 9C

VOB#1 1461	VOB#2 1462	VOB#3 1763		UNRECORDED AREA 1460
EXTENT# α 1471	EXTENT# β 1472	EXTENT# γ 1473	EXTENT# δ 1474	EXTENT# ϵ 1475
				EXTENT# ζ 1470

FIG. 9D

AV FILE 1401

FIG. 9E

VTS (OR RTR_MOV.VRO/RTR_STO.VRO/RTR_STA.VRO) 1402

M_VOB1#		S_VOB1#			
VOB#A 1771	VOB#B 1772	VOB#C 1773	VOB#D 1774	VOB#E 1775	VOB#F 1776
VIDEO OBJECTS 1012	AUDIO OBJECTS 1014	PICTURE OBJECTS 1013	AUDIO OBJECTS 1014	THUMBNAIL OBJECTS 1016	VOB#G 1777
					VOB#H 1778
					VOB#I 1779
RTR_MOV.VRO	RTR_STA.VRO	RTR_STO.VRO	RTR_STA.VRO		

FIG. 9F

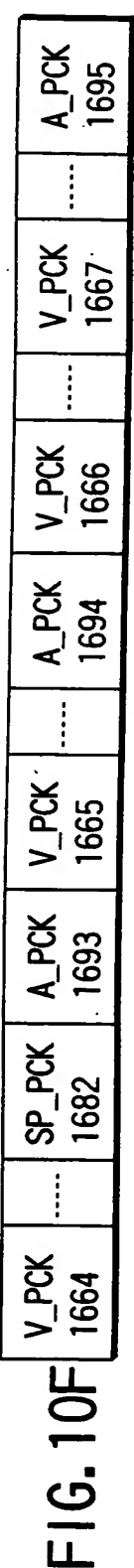
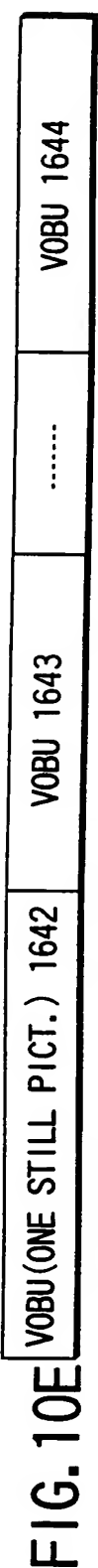
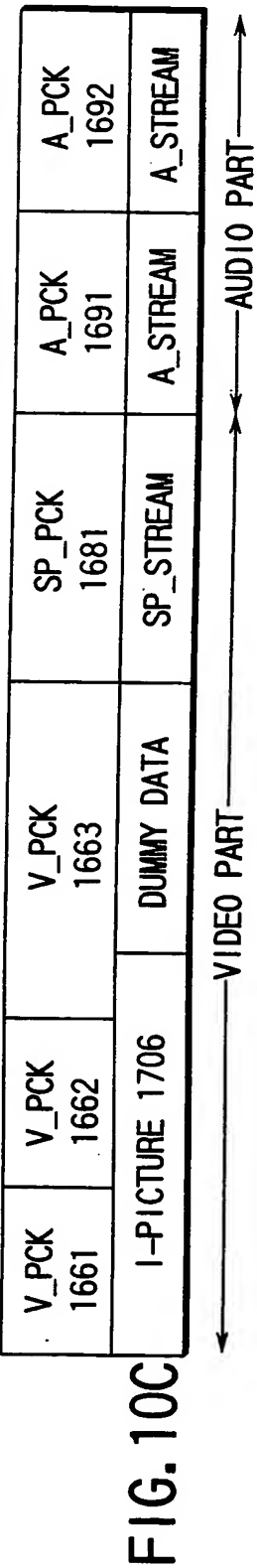


FIG. 10G VOB FOR PICTURE OBJECTS (OR STILL PICTURE VOB GROUP RELATING TO S_VOGL#) 1633

VOBU (ONE STILL PICTURE) 1645			VOBU 1646	-----	VOBU 1647
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FIG. 10H

V_PCK 1668	V_PCK 1669	V_PCK 1670	SP_PCK 1683	V_PCK 1671	V_PCK 1672	V_PCK 1673	-----	V_PCK 1674	-----
I-PICTURE 1707		DUMMY 1704	SP_ STREAM	I-PICTURE 1708		DUMMY 1705	-----	I-PICTURE 1709	

FIG. 10I



FIG. 10J VOB FOR PICTURE OBJECTS (OR STILL PICTURE VOB GROUP RELATING TO S_VOGL#) 1634

VOBU (ONE STILL PICTURE) 1648			VOBU 1649	-----	VOBU 1650
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FIG. 10K

SP_PCK 1684	A_PCK 1696	A_PCK 1697	A_PCK 1698	A_PCK 1699	A_PCK 1700	A_PCK 1701	-----	A_PCK 1702	-----
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FIG. 10L



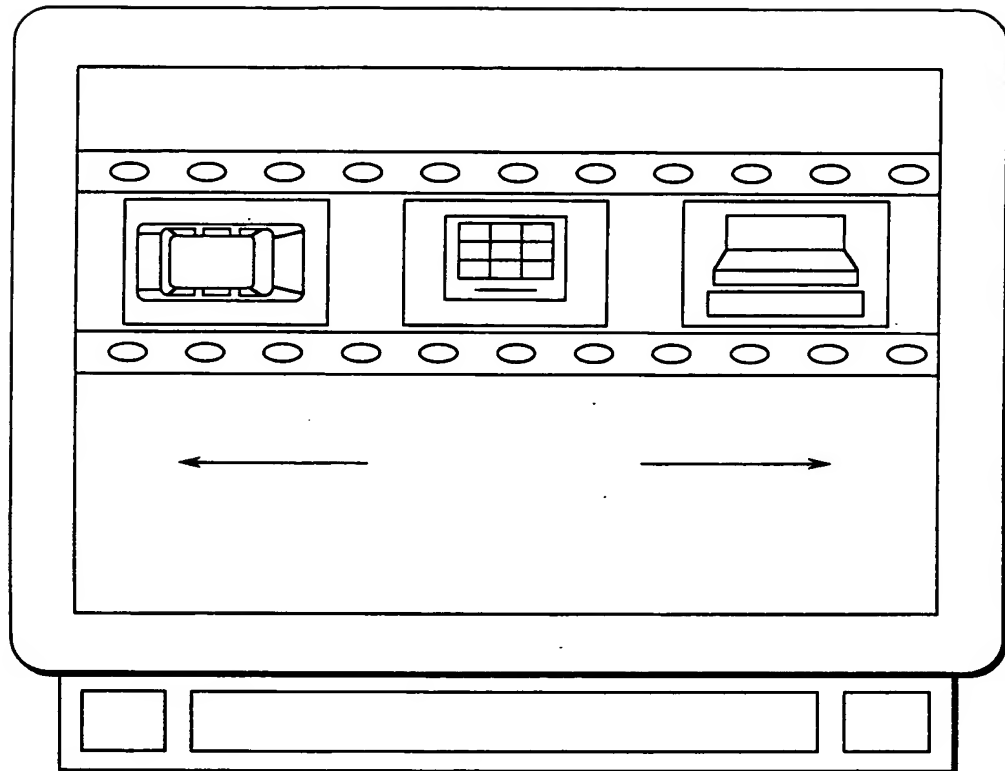


FIG. 11

STILL PICTURE
 AV FILE
 (S_AVFIT)

STILL PICTURE
 AV FILE INFO.
 TABLE INFO.
 (S_AVFITI)

STILL PICT. VOB
 STREAM INFO. #1
 (S_VOB_STI#1)

STILL PICT. VOB
 STREAM INFO. #n
 (S_VOB_STI#n)

STILL PICTURE
 AV FILE INFO.
 (S_AVFI)

STILL PICT. AD-
 DITIONAL AUDIO
 STREAM INFO. #1
 (S_AA_STI#1)

STILL PICT. AD-
 DITIONAL AUDIO
 STREAM INFO. #m
 (S_AA_STI#m)

STILL PICTURE
 ADDITIONAL
 AUDIO FILE INFO.
 (S_AAFI)

VOB INFO. FOR
 PICT. OBJECTS
 MANAGEMENT
 INFO. 1721
 (OR S_AVFI_GI)

SEARCH POINTER
 OF VOB INFO. FOR
 PICT. OBJECTS
 #1 1726 (OR
 S_VOGI_SRP#1)

SEARCH POINTER
 OF VOB INFO. FOR
 PICT. OBJECTS
 #i 1727 (OR
 S_VOGI_SRP#i)

SEARCH POINTER
 OF VOB INFO. FOR
 PICT. OBJECTS
 #k 1728 (OR
 S_VOGI_SRP#k)

VOB INFO. FOR
 PICT. OBJECTS
 #1 1731
 (OR S_VOGI#1)

VOB INFO. FOR
 PICT. OBJECTS
 #i 1732
 (OR S_VOGI#i)

VOB INFO. FOR
 PICT. OBJECTS
 #k 1733
 (OR S_VOGI#k)

VOB GENERAL
 INFORMATION
 FOR PICTURE
 OBJECTS
 1736 (OR
 STILL PICTURE
 VOB GROUP
 GENERAL INFO.
 S_VOG_GI)

VOB ATTRIB.
 INFORMATION
 FOR PICTURE
 OBJECTS
 1737

VOBU MAP FOR
 PICTURE
 OBJECTS
 1738 (OR
 STILL PICTURE
 VOB ENTRES
 S_VOB_ENT#)

FIG. 12 #i=ANY ONE OF #1 TO #k

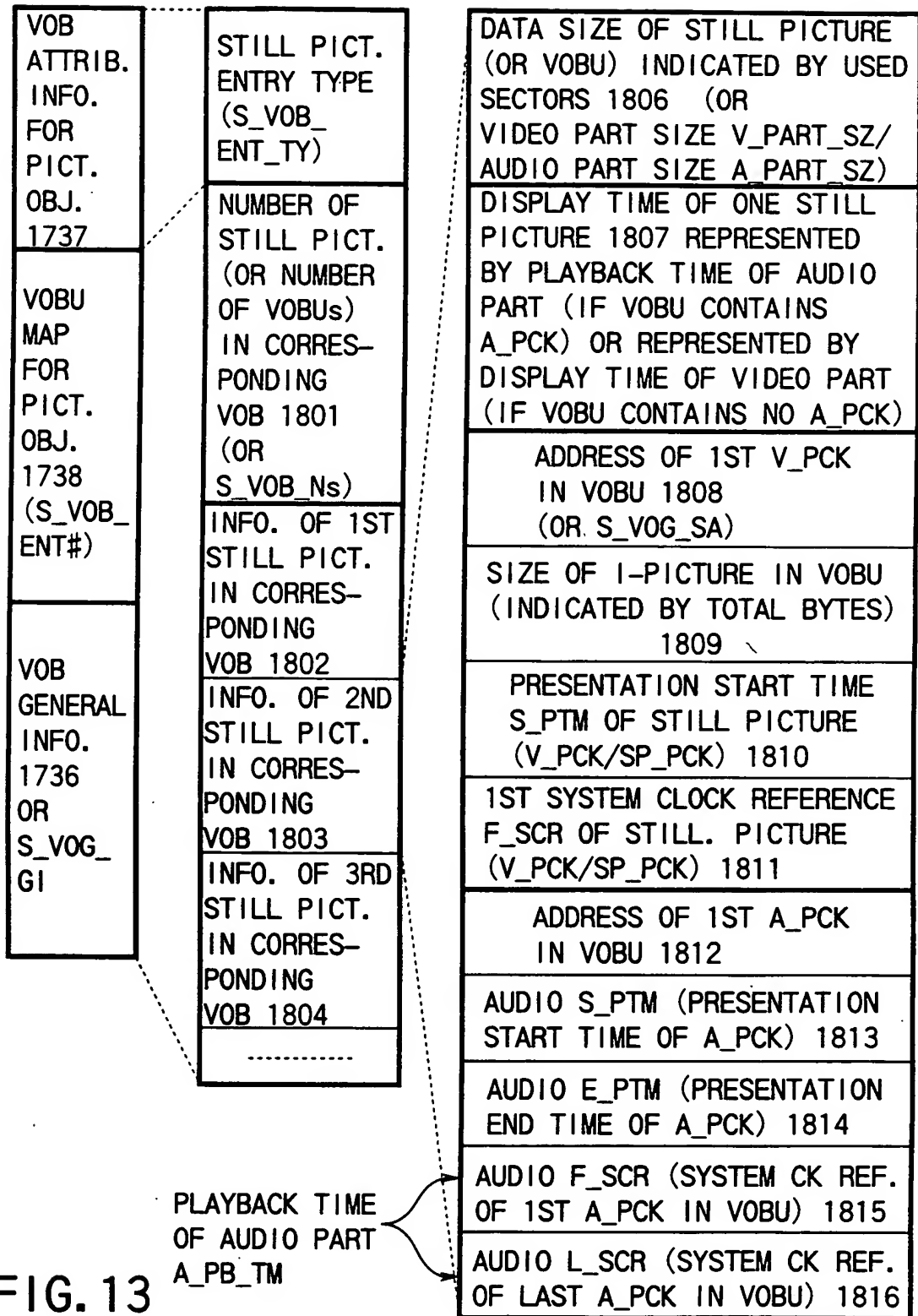


FIG. 13

FIG. 14A

VOB #A 1821	
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FIG. 14B

VOBU 1825	VOBU 1826	VOBU 1827
STILL PICT. NO. 1	STILL PICT. NO. 2	STILL PICT. NO. h

FIG. 14C

STLPCT 1831	AUDIO 1841	STLPCT 1832	AUDIO 1842	STLPCT 1833	AUDIO 1843
V_PCK 1851	A_PCK 1861	V_PCK 1852	SP_PK 1848	V_PCK 1853	A_PCK 1863

FIG. 14D

CONTENTS SPECIFIED BY CELL		1ST STILL PICT. IN CELL	LAST STILL PICT. IN CELL
		V_PCK 1852	V_PCK 1854
		SP_PK 1848	A_PCK 1865
		A_PCK 1865	A_PCK 1866

FIG. 14E

A_PCK 1864	V_PCK 1855	A_PCK 1865	V_PCK 1856	V_PCK 1857	A_PCK 1866	V_PCK 1858
AUDIO 1844	STLPCT 1835	AUDIO 1845	STLPCT 1836	STLPCT 1837	AUDIO 1846	STLPCT 1838

FIG. 14F

STILL PICTURE NO. j	STILL PICTURE NO. h+j-2
VOBU 1828	VOBU 1829

FIG. 14G

VOB #B 1822	
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CONTENTS (S_CI) OF CELL PLAYBACK INFO. (CI) FOR PICTURE OBJECTS 1870	EXAMPLE 1871 WITH RESPECT TO FIG.14	EXAMPLE 1872 WITH RESPECT TO FIG.14
CELL ID (CI_SRP) 1873	_____	_____
TYPE INFORMATION OF CELL (C_TY) 1880	_____	_____
ID INFORMATION OF VOB WITH V_PCK 1874	VOB #A	1821
STILL PICT. NUMBER 1875 IN VOB INCLUDING V_PCK OF 1ST STILL PICTURE IN CELL (S_S_VOB_ENTN)	2	1826
STILL PICT. NUMBER 1876 IN VOB INCLUDING V_PCK OF LAST STILL PICTURE IN CELL (E_S_VOB_ENTN)	h	1827
ID INFORMATION OF VOB WITH A_PCK 1877	VOB #B	1822
STILL PICT. NUMBER 1878 IN VOB INCLUDING A_PCK OF 1ST STILL PICTURE IN CELL	j	1828
PRESENTATION TIME 1879 OF EACH STILL PICTURE HAVING NO CORRESPONDING A_PCK	2 SECONDS (ONE LINE)	_____

FIG.15

20070204-10292001

CONTENTS OF CELL PLAYBACK INFO. (CI) FOR PTT
CELL ID (CI_SRP) 1883
TYPE INFO. OF CELL (C_TY) 1882
ID INFO. OF PTT WITH V_PCK 1884
STILL PICTURE NUMBER 1885 IN PTT OF VOB INCLUDING V_PCK OF 1ST STILL PICTURE IN CELL
STILL PICTURE NUMBER 1886 IN PTT OF VOB INCLUDING V_PCK OF LAST STILL PICTURE IN CELL
ID INFO. OF PTT WITH A_PCK 1887
STILL PICTURE NUMBER 1888 IN PTT OF VOB INCLUDING A_PCK OF 1ST STILL PICTURE IN CELL
PRESENTATION TIME 1889 OF EACH STILL PICT. HAVING NO CORRESPONDING A_PCK

FIG. 16

20060720 "H032000"

STILL PICTURE AV FILE INFO.
(S_AVFI) FOR PTT (CHAPTER)

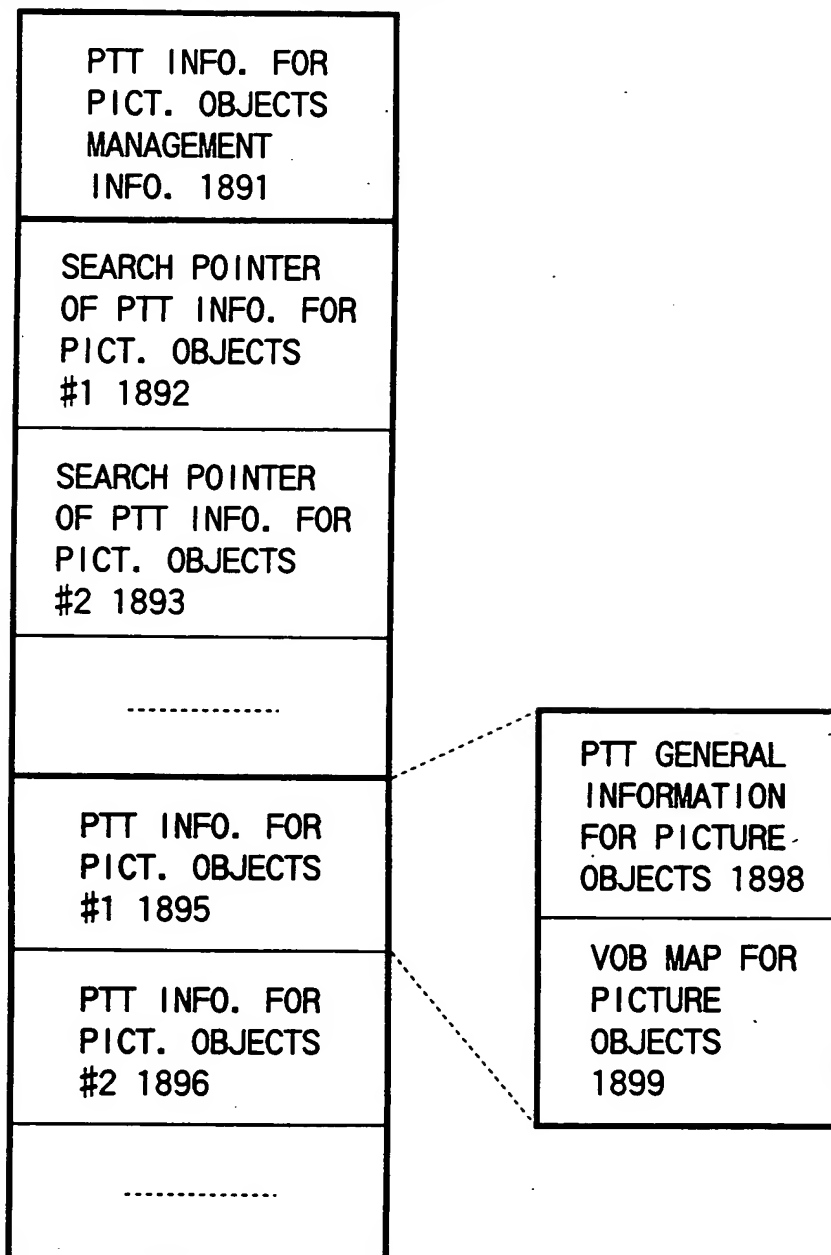


FIG. 17

10076294.024902
"18292007"

VOB MAP FOR
 PICT. OBJECTS
 1899

NUMBER OF
 STILL PICT.
 (OR NUMBER
 OF VOBs) IN
 CORRESPONDING
 PTT 1901
 (OR S_VOB_Ns)

INFO. OF 1ST
 STILL PICT. IN
 CORRESPONDING
 PTT 1902

INFO. OF 2ND
 STILL PICT. IN
 CORRESPONDING
 PTT 1903

.....

DATA SIZE OF STILL PICTURE
 (OR VOB) INDICATED BY USED
 SECTORS 1906

DISPLAY TIME OF ONE STILL
 PICTURE 1907 REPRESENTED
 BY PLAYBACK TIME OF AUDIO
 PART (IF VOB CONTAINS
 A_PCK) OR REPRESENTED BY
 DISPLAY TIME OF VIDEO PART
 (IF VOB CONTAINS NO A_PCK)

ADDRESS OF 1ST V_PCK
 IN VOB 1908
 (OR S_VOG_SA)

SIZE OF I-PICTURE IN VOB
 (INDICATED BY TOTAL BYTES)
 1909

PRESENTATION START TIME
 S_PTM OF STILL PICTURE
 (V_PCK/SP_PCK) 1910

1ST SYSTEM CLOCK REFERENCE
 F_SCR OF STILL. PICTURE
 (V_PCK/SP_PCK) 1911

ADDRESS OF 1ST A_PCK
 IN VOB 1912

AUDIO S_PTM (PRESENTATION
 START TIME OF A_PCK) 1913

AUDIO E_PTM (PRESENTATION
 END TIME OF A_PCK) 1914

AUDIO F_SCR (SYSTEM CK REF.
 OF 1ST A_PCK IN VOB) 1915

AUDIO L_SCR (SYSTEM CK REF.
 OF LAST A_PCK IN VOB) 1916

FIG. 18

10075284.021903

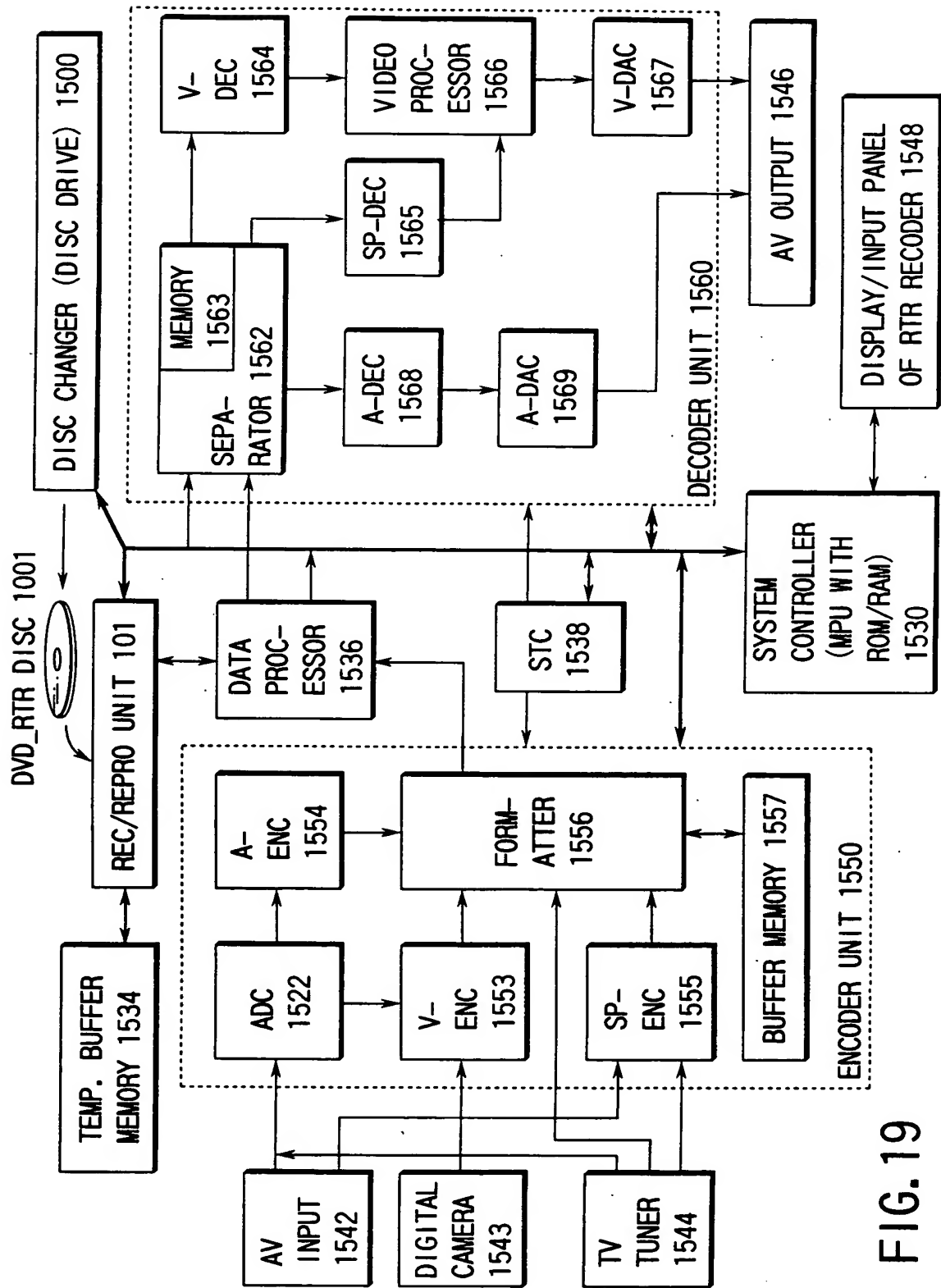


FIG. 19

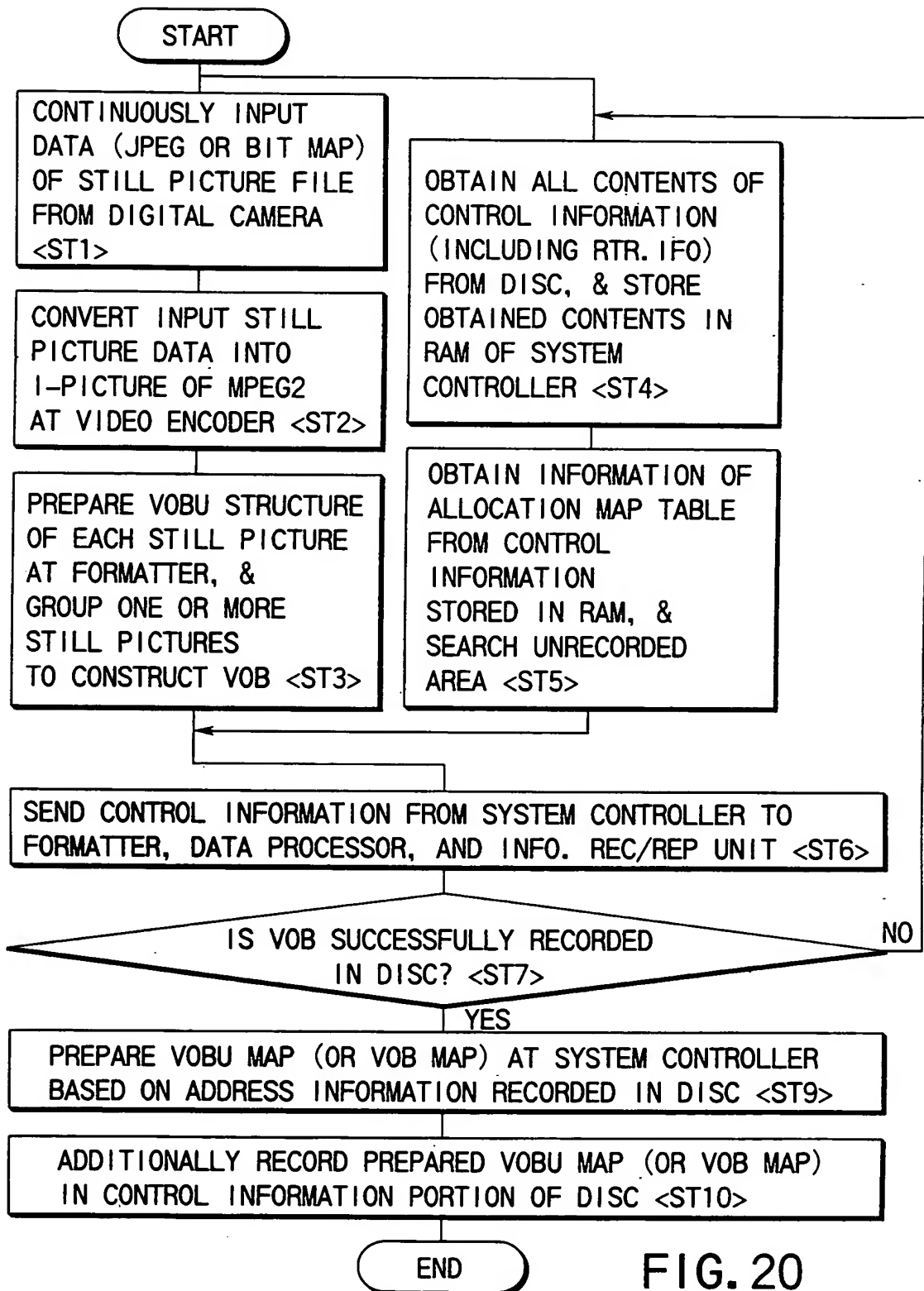


FIG. 20

2007-04-18 14:00:00

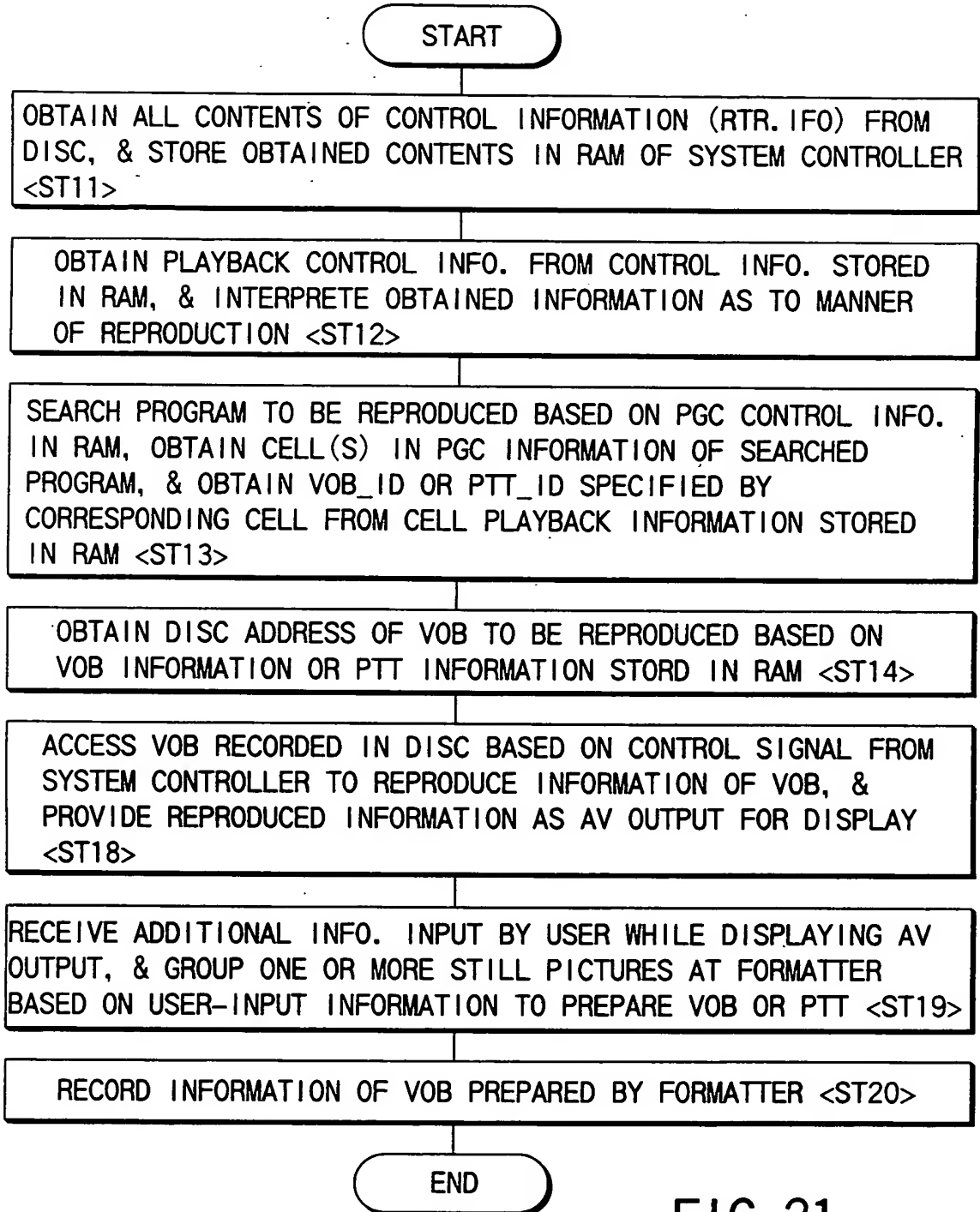


FIG. 21

2007-03-14 10:29:04

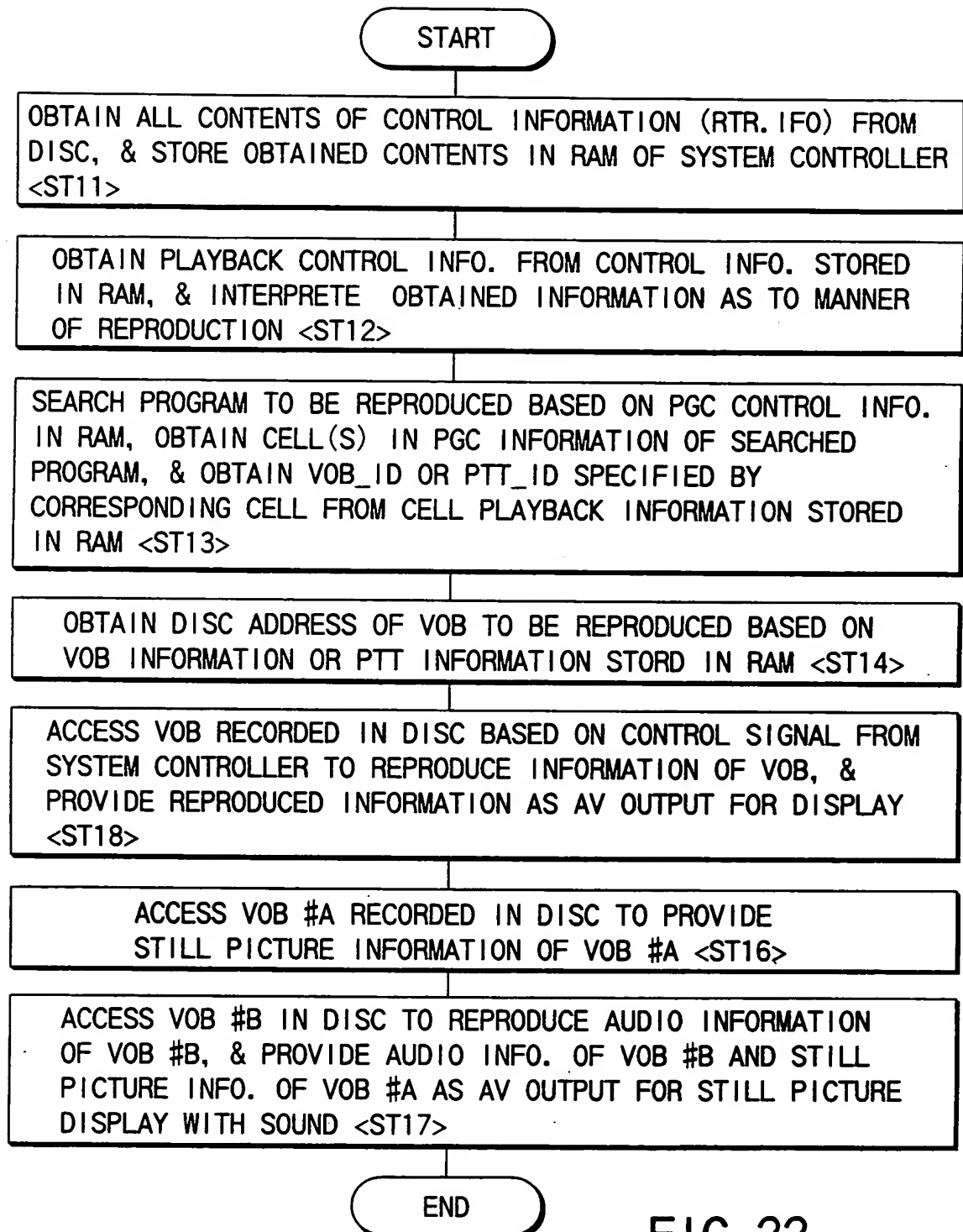


FIG. 22

205723-13292004

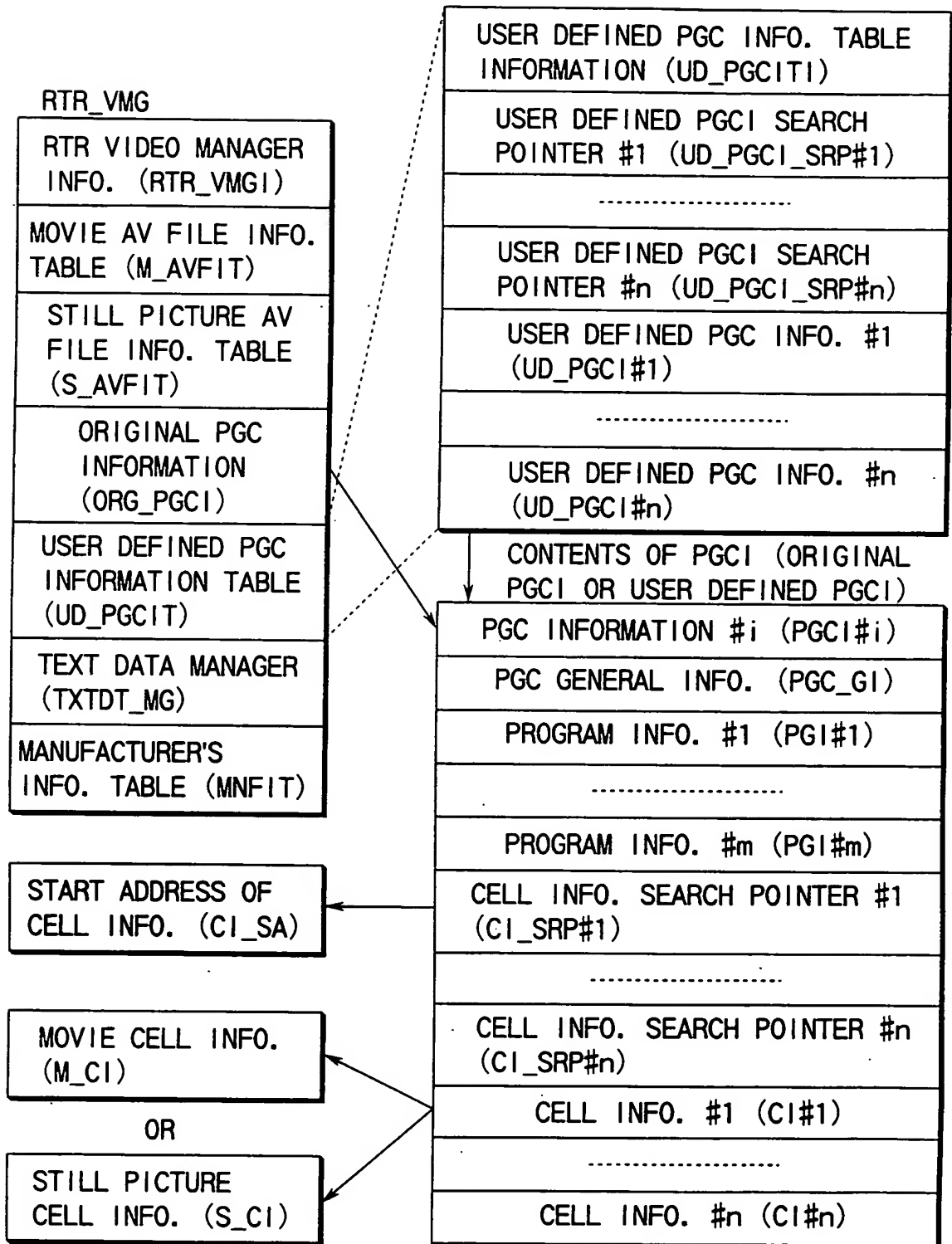


FIG. 23

200704021007

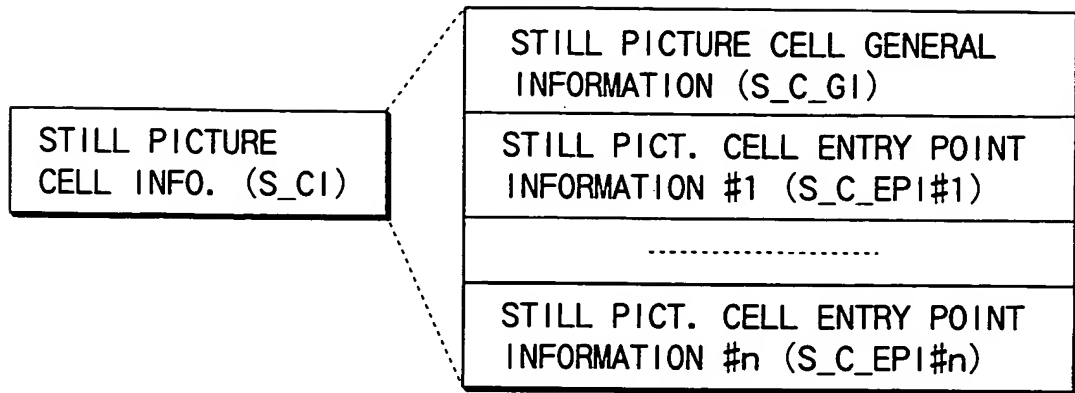


FIG. 24

CONTENTS OF S_C_GI

FIELD NAME	CONTENTS
RESERVED	RESERVED
C_TY	CELL TYPE
S_VOI_SRPN	S_VOI SEARCH POINTER NUMBER
C_EPI_Ns	NUMBER OF CELL ENTRY POINT INFO.
S_S_VOB_ENTN	START S_VOB_ENT NUMBER
E_S_VOB_ENTN	END S_VOB_ENT NUMBER

FIG. 25

CONTENTS OF S_C_EPI

FIELD NAME	CONTENTS
EP_TY	ENTRY POINT TYPE
S_VOB_ENTN	S_VOB_ENT NUMBER
PRM_TXTI	PRIMARY TEXT INFORMATION

FIG. 26

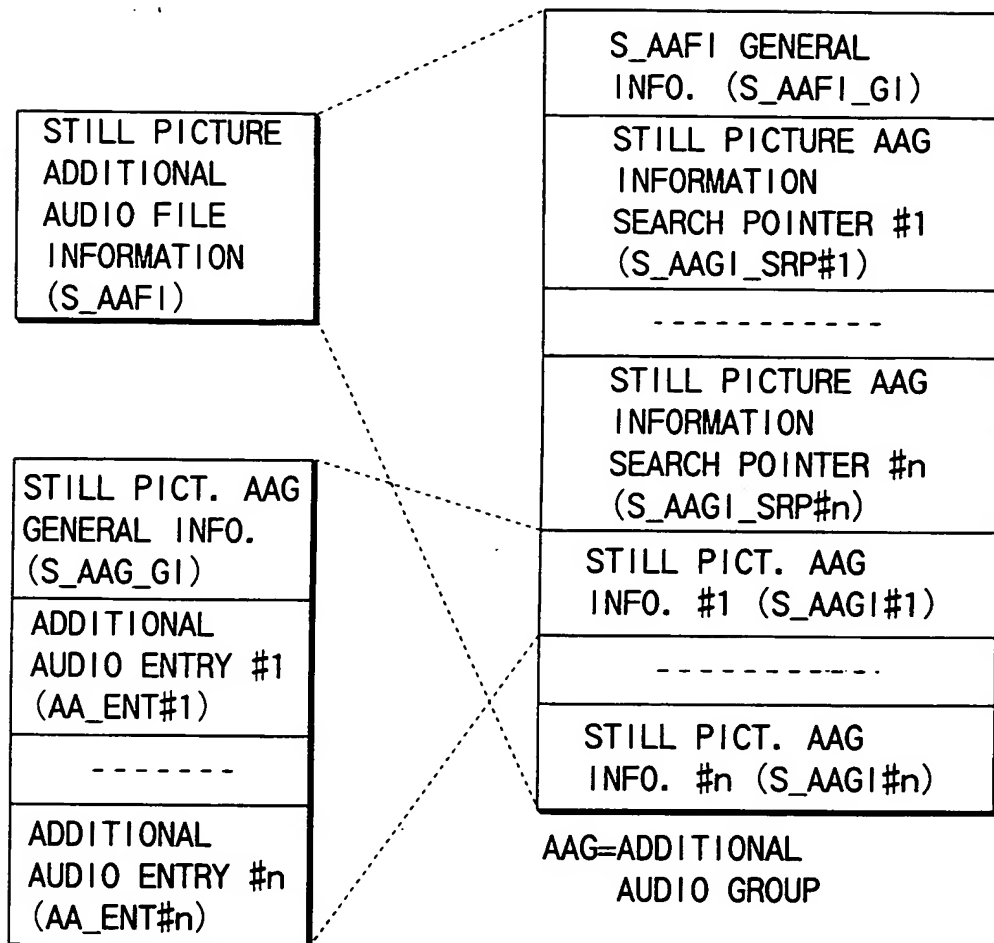


FIG. 27

CONTENTS OF S_AAG_GI

FIELD NAME	CONTENTS
AA_ENT_Ns	NUMBER OF AA_ENT
S_AA_STIN	STILL PICTURE ADDITIONAL AUDIO STREAM INFORMATION NUMBER
S_AAG_SA	START ADDRESS OF THIS AAG IN STILL PICTURE ADDITIONAL AUDIO FILE

FIG. 28

CONTENTS OF AA_ENT

FIELD NAME	CONTENTS
AA_TY	ADDITIONAL AUDIO TYPE
AA_SZ	SIZE OF ADDITIONAL AUDIO STREAM
AA_PB_TM	PLAYBACK TIME OF ADDITIONAL AUDIO STREAM (MEASURED BY VIDEO FIELDS)

FIG. 29

CONTENTS OF S_VOG_GI

FIELD NAME	CONTENTS
S_VOB_Ns	NUMBER OF S_VOBS
S_VOB_STIN	STILL PICTURE VOB STREAM INFORMATION NUMBER
FIRST_VOB_REC_TM	TIME WHEN THE FIRST VOB IN THIS VOB GROUP WAS RECORDED
LAST_VOB_REC_TM	TIME WHEN THE LAST VOB IN THIS VOB GROUP WAS RECORDED
S_VOG_SA	START ADDRESS OF THIS VOB GROUP IN STILL PICTURE AV FILE

FIG. 30

CONTENTS OF S_VOB_ENT (TYPE 1)

FIELD NAME	CONTENTS
S_VOB_ENT_TY	STILL PICTURE VOB ENTRY TYPE
V_PART_SZ	SIZE OF VIDEO PART

FIG. 31

10076294-0000

CONTENTS OF S_VOB_ENT (TYPE 2)

FIELD NAME	CONTENTS
S_VOB_ENT_TY	STILL PICTURE VOB ENTRY TYPE
V_PART_SZ	SIZE OF VIDEO PART
A_PART_SZ	SIZE OF ORIGINAL AUDIO PART
A_PB_TM	PLAYBACK TIME OF AUDIO PART (DESCRIBED IN VIDEO FIELDS)

FIG. 32

CONTENTS OF S_VOB_ENT (TYPE 3)

FIELD NAME	CONTENTS
S_VOB_ENT_TY	STILL PICTURE VOB ENTRY TYPE
V_PART_SZ	SIZE OF VIDEO PART
S_AAGN	ADDITIONAL AUDIO GROUP NUMBER
AA_ENTN	AA_ENT NUMBER

FIG. 33

CONTENTS OF S_VOB_ENT (TYPE 4)

FIELD NAME	CONTENTS
S_VOB_ENT_TY	STILL PICTURE VOB ENTRY TYPE
V_PART_SZ	SIZE OF VIDEO PART
A_PART_SZ	SIZE OF ORIGINAL AUDIO PART
A_PB_TM	PLAYBACK TIME OF AUDIO PART
S_AAGN	ADDITIONAL AUDIO GROUP NUMBER
AA_ENTN	AA_ENT NUMBER

FIG. 34

20075234-02493

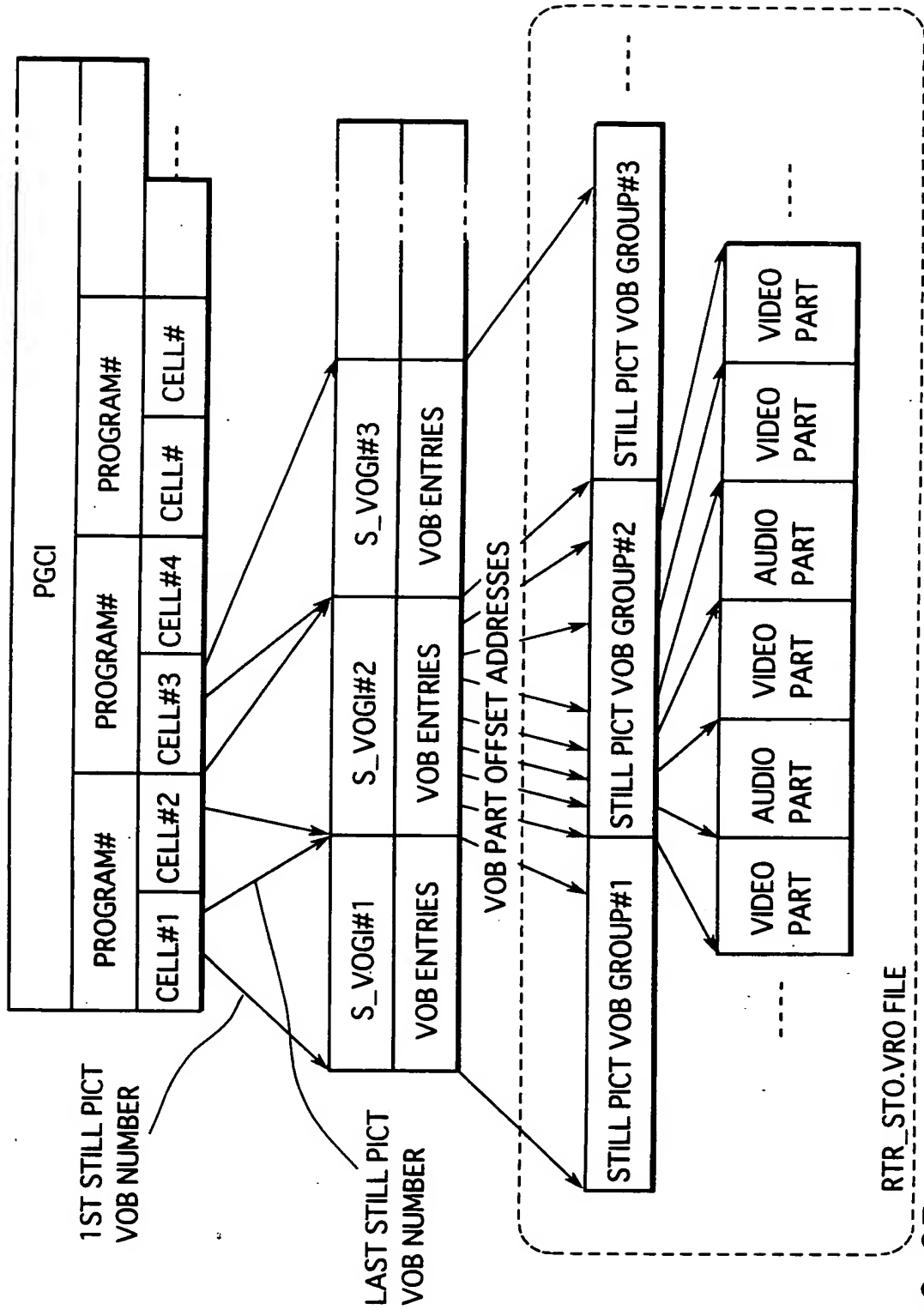


FIG. 35

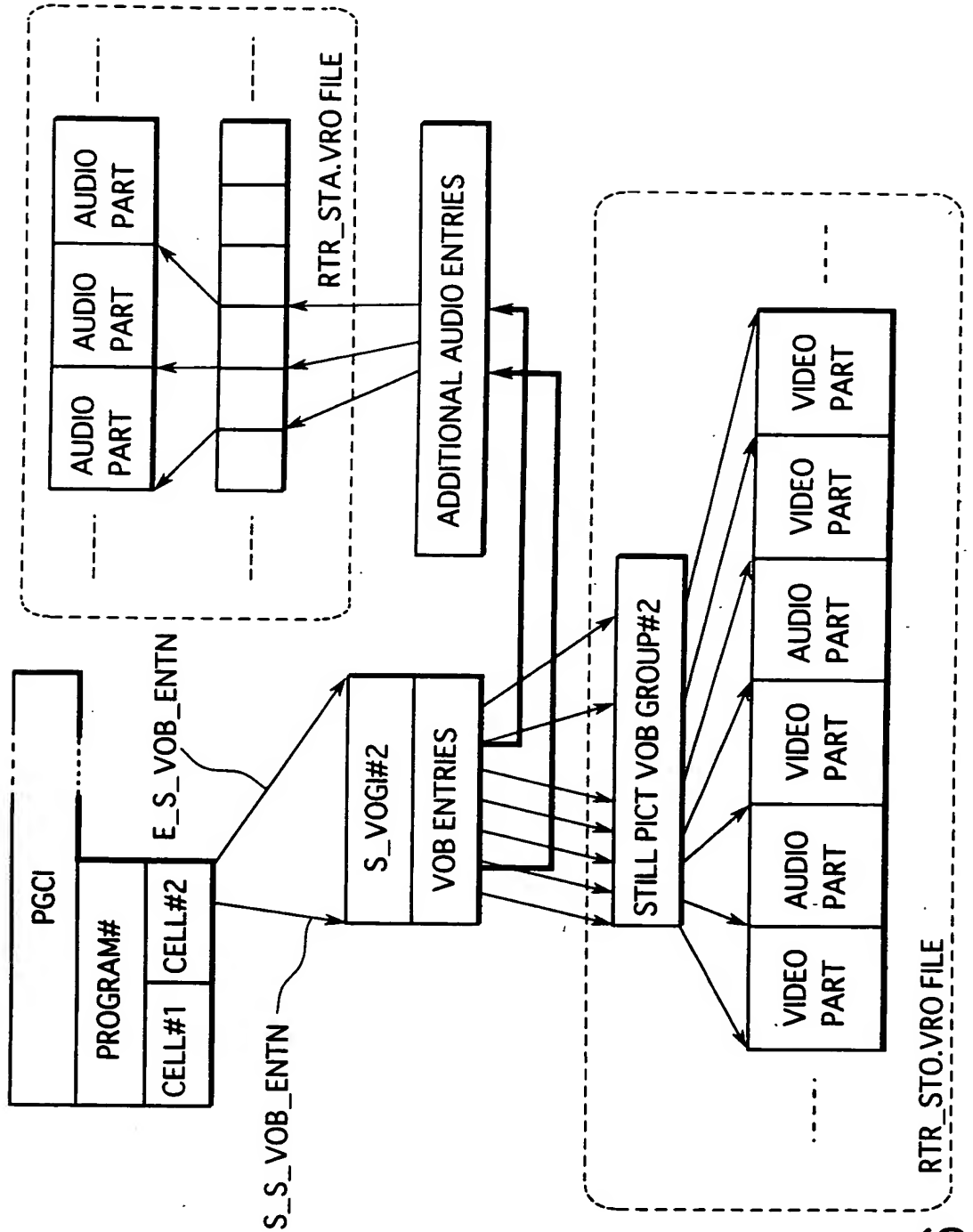


FIG. 36

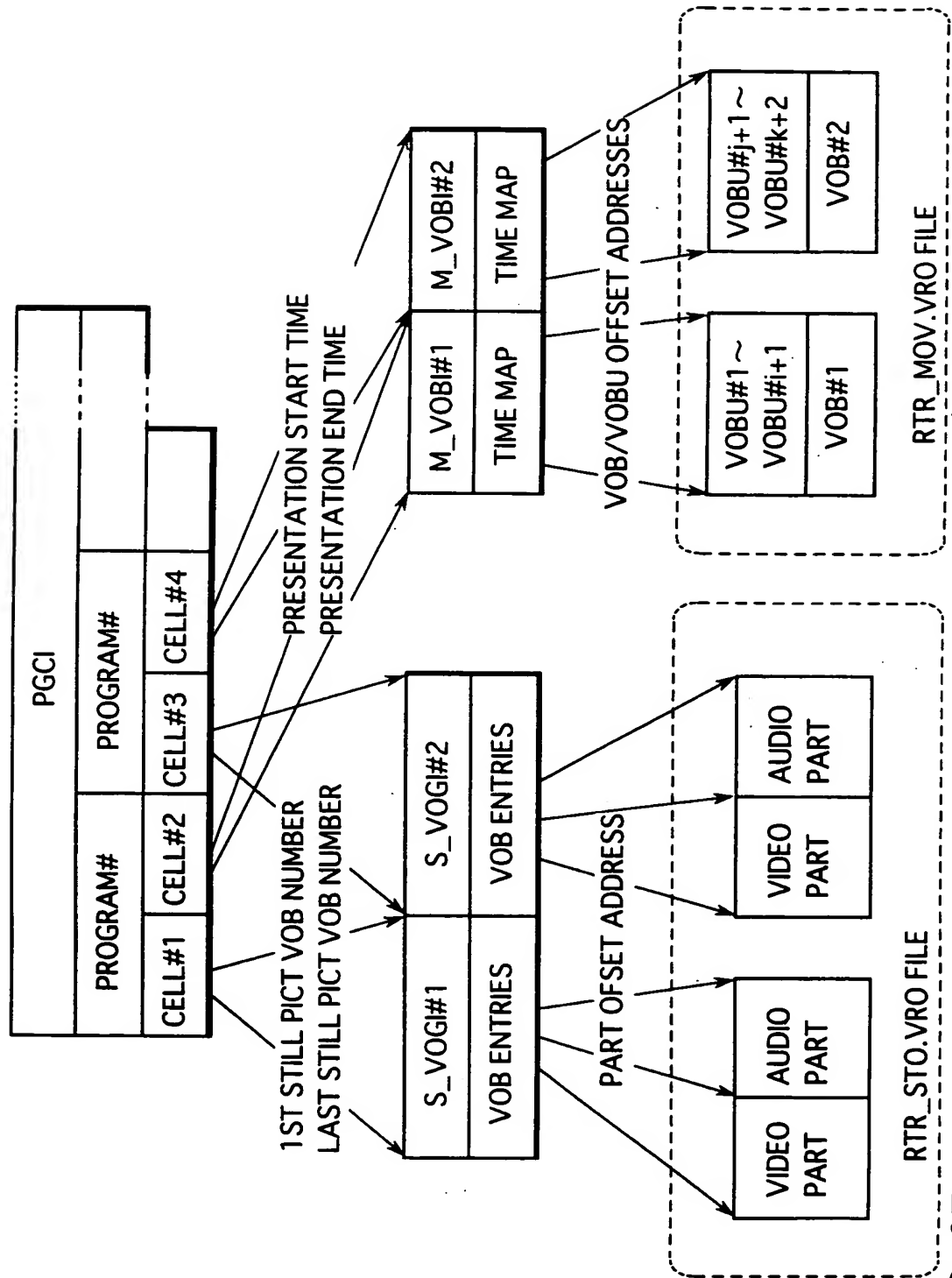


FIG.37

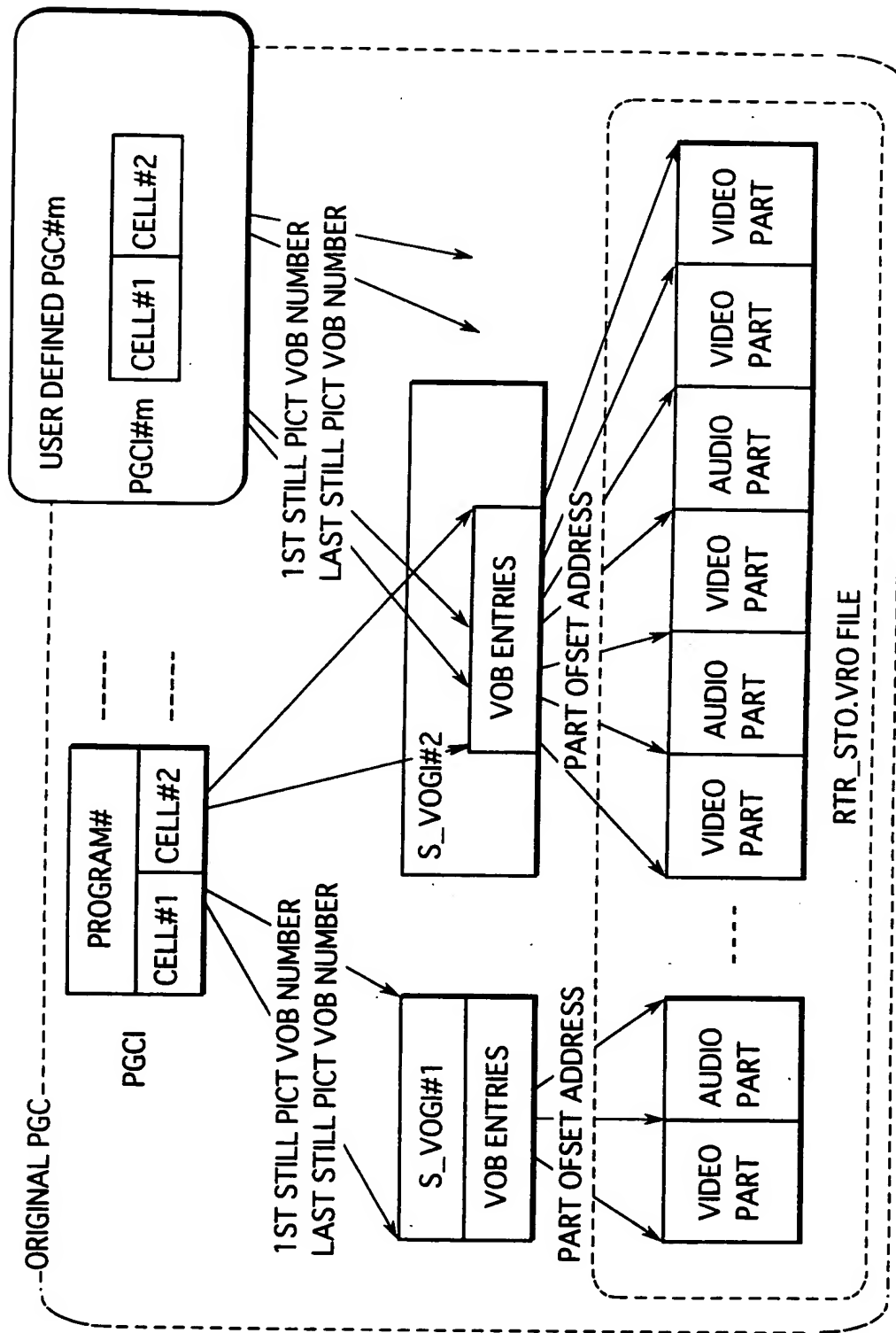


FIG. 38